



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,621	03/05/2001	Seppo Noponen	1101.071	3648

7590 11/21/2005  
Fildes & Outland  
Suite 2  
20916 Mack Avenue  
Grosse Pointe Woods, MI 48236

EXAMINER
----------

LAO, LUN S

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/786,621	NOPONEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lun-See Lao	2644	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Introduction*

1. This action is in response to the amendment filed on 11-01-2005. Claims 6-10 and 13-15 have been amended and claims 1-5 have been withdrawn. Claims 6-15 are pending.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claimed limitation "that the loudspeaker includes a non-circular narrow opening arrangement, comprising at least one elongated narrow opening which is high vertically and narrow horizontally in front of said diaphragm in the construction forming chamber and leading away from chamber, to allow air to pass from chamber to the free space" was not clearly supported in further detail in the specification nor in the any claim (see specification page 5 lines 8-18).

The specification fails to teach that the loudspeaker includes a non-circular narrow opening arrangement, comprising at least one elongated narrow opening which is high vertically and narrow horizontally in front of said diaphragm in the construction forming

Art Unit: 2644

chamber and leading away from chamber, to allow air to pass from chamber to the free space (see specification page 5 lines 8-18).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marquiss (US PAT 4,385,210) in view of Zelinka et al (USPAT. 6,097,830).

Consider claim 6 Marquiss teaches a pillar loudspeaker intended for sound reproduction indoors and outdoors, which pillar loudspeaker includes a cabinet construction supporting a diaphragm ( see fig.1 ,13, 14), at least one operating device (see fig.5, 29) for driving the diaphragm, which is operationally straight, unified, and relatively stiff single component, which tall vertically and narrow horizontally such a way that the height H of said diaphragm (see fig.1, 13-14) is at least three times, preferably five times greater than its width W, and in which the diaphragm (see fig.1, 13-14) is arranged to vibrate mechanically by means of the force of said operating device (see fig.5, 29) to produce a sound in the free space, the cabinet construction being arranged to prevent acoustic feedback in such a way that the cabinet construction

Art Unit: 2644

encloses one side of diaphragm (see fig.1, 13-14) within the other side having an air connection to the free space, characterized in that the loudspeaker (see figs. 1,3,5,8,10 and abstract) includes a port arrangement (see fig.2, 64), comprising at least one narrow open (port ,see fig.2 (64)) in front of diaphragm (see fig.1, 13-14) in the construction forming chamber (see fig.2, 66) and leading away from chamber (see fig.2, 64), allow air to pass from chamber (see fig.2, 64) the free space (see figs. 1,3,5,8,10 and col. 10 lines 6-16); but Marquiss does not clearly teach that the loudspeaker includes a non-circular narrow opening arrangement, comprising at least one elongated narrow opening which is high vertically and narrow horizontally in front of said diaphragm in the construction forming chamber and leading away from chamber, to allow air to pass from chamber to the free space.

However, Zelinka teaches that the loudspeaker (see fig. 1) includes a non-circular narrow opening arrangement (23,24), comprising at least one elongated narrow opening (23, 24) which is high vertically and narrow horizontally in front of said diaphragm (38) inherently in the construction forming chamber and leading away from chamber, to allow air to pass from chamber to the free space (see col. 6 line25- 54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Marquiss and Zelinka to provide magnetic acoustic transducers with enhanced sound reproduction characteristics, particularly reduced audible distortion and increased maximum sound pressure level.

Art Unit: 2644

Consider claims 7-8, Marquiss teaches a pillar loudspeaker of characterized in that said diaphragm (see fig.1, 13-14) is placed at the side of said cabinet (see figs. 1-2), which is arranged to be installed with attachment devices (see fig.5, 17) at distance from and facing wall surface (see fig.5, 16), at least one narrow opening (such as, a port see fig., 2, (64)) being formed between an edge of the side of said cabinet and wall surface (see figs. 1-3, 5,8,10 (16) and col.4 lines 30-66); and a pillar loudspeaker characterized in that the cabinet construction includes an enclosure construction enclosing said diaphragm (see fig.1, 13-14), in which enclosure there is a narrow opening (such as, a port see fig., 2, (64)) on the side opposite said diaphragm (see fig. 2. (1-3,5,8,10) and col.4 lines 30-66, and col.10 line 6-16).

Consider claim 9, Marquiss does not clearly teach a pillar loudspeaker of characterized in that the width  $d$  of said narrow opening is 12- 30 % on the width  $W$  of said diaphragm; but Marquiss does not limit what percentage between the width  $d$  of the narrow opening on the width  $W$  of the diaphragm (see fig.5).

Therefore, it would have been obvious to one of the ordinary skill in the art that Marquiss could have that the width  $d$  of said narrow opening is 12- 30 % on the width  $W$  of said diaphragm as claimed for the purpose of acquiring the desired audio sound quality from the audio source which provide to the user in the market demand.

Consider claims 10-11, Marquiss teaches a pillar loudspeaker of characterized in that the loudspeaker includes several point-like operating devices (see fig.5, 29) and that said diaphragm (13) has a curved cross-section, stiffen it (see col. 4, line 30-col.5 line 45); and the loudspeaker of characterized in that the loudspeaker includes one

Art Unit: 2644

more high linear ("normalizing spring") operating devices (see fig.5, 29 and col.5 line 40-col.6 line 31).

Consider claim 12, Zelinka teaches a loudspeaker of characterized in that said diaphragm comprises a composite material, molded, or laminated construction, its material being aluminum (see col.6 line 55-col.7 line32).

Consider claim 13-14, Marquiss teaches that the loudspeaker of characterized in that voice coil element (see figs. 5-7, (29)), which moves in an air connecting narrow opening (such as, a port see fig., 2, (64)) of the body of a said linear operating device (29) and is elongated in its circumferential plane, is attached either directly or indirectly to the base of diaphragm (13 and see col. 5 line 40-col. 6 line 62); and a loudspeaker of characterized in that the body of linear operating device (see figs, 5-7, 29) is a unified component, which forms two high narrow opening (such as, a port see fig., 2, (64)) between the magnetic poles, with high voice coil (29) being fitted into these narrow openings (such as, a port see fig., 2, (64))(see figs.5-7,10 line 40-col.6 line 31 and col.6 line 32-col.7 line 57).

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marquiss (US PAT 4,385,210) as modified by Zelinka (US PAT. 6,097,830) as applied to claims 6 and 11-13, above and further in view of Mori (JP 59-086997).

Consider claim 15, Marquiss and Zelinka do not clearly teach a loudspeaker of the characterized in that the body of high voice coil is made from aluminum.

Art Unit: 2644

However, Mori teaches a loudspeaker of the characterized in that the body of high voice coil is made from aluminum (see fig.1, and constitution).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Mori into the teaching of Marquiss and Zelinka to provide its heat resistance.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 6-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



Art Unit: 2644

8 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Denda (US PAT 6,480,614) is recited to show other related Method for sound reproduction and pillar loudspeaker.

9. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

**(703) 872-9306**

Hand-delivered responses should be brought to:

Customer Service Window

Randolph Building

401 Dulany Street

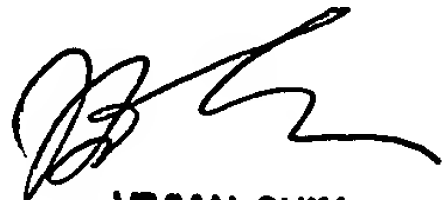
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501  
Date 11-15-2005

  
**VIVIAN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**